

Wherefore, what is claimed is:

1. A system for a discovering electronic device to discover the presence and network address of one or more discoverable electronic devices which are connected to the same network as the discovering device and which are located in the same delimited space as the discovering device, comprising:  
a general purpose computing device residing in the discovering electronic device;  
a computer program comprising program modules executable by the general purpose computing device, wherein the computing device is directed by the program modules of the computer program to,  
receive a signature signal transmitted by a one of said one or more discoverable electronic devices, wherein the signal comprises data representing a signature of the discoverable device indicative of its presence in the delimited space and its being accessible via said network,  
transmit a request signal for receipt by the discoverable electronic device whose signature was received which requests the address assigned to that discoverable device on the network to be transmitted to the discovering device, and  
receive a reply signal transmitted by the discoverable electronic device whose signature was received which comprises data representing the requested network address, wherein  
the signature, request and reply signals are not transmitted via the network and are transmitted in a manner that substantially limits their reception to the delimited space.

2. The system of Claim 1, wherein the signature signal transmitted by the discoverable electronic device further comprises an indicator indicating the type of electronic device it is, and wherein the program module for transmitting a request signal is executed only for a discoverable device of the type that it is desired for the discovering device to establish communications with, wherein the

device type is ascertained from the indicator included in the signature signal transmitted by the discoverable electronic device.

3. The system of Claim 1, wherein the discovering device and each discoverable device comprises a microphone and loudspeaker for receiving and transmitting audio signals respectively, and wherein the signature, request and reply signals are audio signals.

4. The system of Claim 3, wherein the signature signal is a low amplitude audio signal inaudible to humans which has the signature of the discoverable electronic device responsible for transmitting it embedded therein in the form an audio watermark, and wherein the program module for receiving a signature signal comprises a sub-module for obtaining the discoverable device's signature from the audio watermark.

5. The system of Claim 3, wherein the program module for transmitting a request signal comprises a sub-module for generating the request signal in the form of a low amplitude audio signal inaudible to humans which has the address request embedded therein as an audio watermark, such that the discoverable device receiving the request signal obtains the address request from the audio watermark.

6. The system of Claim 3, wherein the reply signal is a low amplitude audio signal inaudible to humans which has the data representing the requested network address embedded therein in the form an audio watermark, and wherein the program module for receiving a reply signal comprises a sub-module for obtaining the discoverable device's network address from the audio watermark.

7. The system of Claim 3, wherein the signature signal is an audio signal audible to humans which has the signature of the discoverable electronic device responsible for transmitting it encoded therein, and wherein the program

module for receiving a signature signal comprises a sub-module for decoding the discoverable device's signature from the signature signal.

5           8.     The system of Claim 3, wherein the program module for transmitting a request signal comprises a sub-module for generating the request signal in the form of an audio signal audible to humans which has the address request encoded therein, such that the discoverable device receiving the request signal obtains the address request by decoding the request signal.

10           9.     The system of Claim 3, wherein the reply signal is an audio signal audible to humans which has the data representing the requested network address encoded therein, and wherein the program module for receiving a reply signal comprises a sub-module for decoding the discoverable device's network address from the reply signal.

15           10.    The system of Claim 1, wherein the signature signal is transmitted by a discoverable electronic device on a periodic basis.

20           11.    The system of Claim 1, wherein the signature signal transmitted by a discoverable electronic device is encrypted, and wherein the program module for receiving the signature signal transmitted by a discoverable electronic device comprises a sub-module for decrypting the signal.

25           12.    The system of Claim 1, wherein the reply signal transmitted by a discoverable electronic device is encrypted, and wherein the program module for receiving the reply signal transmitted by a discoverable electronic device comprises a sub-module for decrypting the signal.

30           13.    The system of Claim 1, wherein one or more of the discoverable devices further comprises a confirmation actuator which is only capable of being activated by person physically present in the delimited space, and wherein a

person must activate the confirmation actuator on a discoverable device having one before that discoverable device will transmit the signature and reply signal.

5           14.    The system of Claim 1, wherein one or more of the discoverable devices further comprises a confirmation actuator which is only capable of being activated by person physically present in the delimited space, and wherein a person must activate the confirmation actuator on a discoverable device having one before that discoverable device will transmit the reply signal.

10           15.    A computer-implemented process for a discovering electronic device among at least one discoverable electronic devices, each of which is connected to a common network and located in the same delimited space, to discover the presence and network address of one or more of said discoverable  
15    electronic devices to facilitate the transfer of data and other communications over the common network, said process comprising using a computer to perform the following process actions:

                  the discovering device receiving a signal transmitted by a discoverable electronic device, wherein the signal comprises data representing  
20    the address assigned to the discoverable device on the common network, and wherein the signal is not transmitted via the common network and is transmitted in a manner that substantially limits its reception to the delimited space; and

                  the discovering device using the received network address to establish communications via the common network with the discoverable device  
25    that transmitted the address.

          16.    The process of Claim 15, wherein the signal transmitted by the discoverable electronic device further comprises a signature expressly indicating the type of electronic device it is, and inherently indicating its presence in the  
30    delimited space and its being accessible via said common network.

17. The process of Claim 16, wherein the process action of the discovering device using the received network address to establish communications via the common network with the discoverable device that transmitted the address is performed only for a discoverable device of the type that it is desired for the discovering device to establish communications with, wherein the device type is ascertained from the signature included in the signal transmitted by the discoverable electronic device.

18. The process of Claim 16, wherein the signature is in the form of an identifier that distinguishes the discoverable electronic device transmitting the signal that includes the signature from all other discoverable electronic devices in the delimited space.

19. The process of Claim 15, wherein each discoverable device comprises an infrared (IR) transmitter and the discovering device comprises an IR receiver, and wherein the signal transmitted by a discoverable electronic device is an IR signal emitted from its IR transmitter, and wherein the process action of the discovering device receiving a signal transmitted by a discoverable electronic device comprises receiving the signal via its IR receiver.

20. The process of Claim 19, wherein the IR transmitter of each discoverable electronic device is powerful enough to extend throughout the delimited space.

21. The process of Claim 15, wherein the signal transmitted by a discoverable electronic device is transmitted on a periodic basis.

22. The process of Claim 15, wherein the signal transmitted by a discoverable electronic device is encrypted, and wherein the process action of the discovering device receiving a signal transmitted by a discoverable electronic device comprises an action of decrypting the signal.

23. The process of Claim 15, wherein one or more of the discoverable devices further comprises a confirmation actuator which is only capable of being activated by person physically present in the delimited space, and wherein a  
5 person must activate the confirmation actuator on a discoverable device having one before that discoverable device will transmit its signal.

24. A system for a discovering electronic device to discover the presence and network address of one or more discoverable electronic devices  
10 which are connected to the same network as the discovering device and which are located in the same delimited space as the discovering device, comprising:  
a general purpose computing device residing in the discovering electronic device;  
a computer program comprising program modules executable by  
15 the general purpose computing device, wherein the computing device is directed by the program modules of the computer program to,  
transmit a request signal which requests the network address assigned to a discoverable device be transmitted to the discovering device, and  
20 receive a reply signal transmitted by a discoverable electronic device which comprises data representing the requested network address, wherein  
the request and reply signals are not transmitted via the network and are transmitted in a manner that substantially limits their reception  
25 to the delimited space.

25. The system of Claim 24, wherein the program module for transmitting a request signal, comprises a sub-module for specifying the type of discoverable electronic device it is desired to obtain the network address for,  
30 such that only the discoverable electronic device of the specified type which is

presence in the delimited space and accessible via said network transmits a reply signal.

26. The system of Claim 24, wherein the reply signal transmitted by the discoverable electronic device further comprises a signature expressly indicating the type of electronic device it is, and inherently indicating its presence in the delimited space and its being accessible via said common network, thereby allowing the discovering device to determine if it wants to establish communications with the discoverable device over the network.

27. The system of Claim 24, wherein the request signal is transmitted on a periodic basis.

28. The system of Claim 24, wherein the reply signal transmitted by a discoverable electronic device is encrypted, and wherein the program module for receiving the reply signal transmitted by a discoverable electronic device comprises a sub-module for decrypting the signal.

29. The system of Claim 24, wherein one or more of the discoverable devices further comprises a confirmation actuator which is only capable of being activated by person physically present in the delimited space, and wherein a person must activate the confirmation actuator on a discoverable device having one before that discoverable device will transmit the reply signal.

30. A computer-readable medium having computer-executable instructions for facilitating the discovery of the network address of a discoverable electronic device by a discovering electronic device, wherein each device is connected to a common network and located in the same delimited space, said computer-executable instructions comprising:

transmitting a signal comprising data representing the address assigned to the discoverable device on the common network from the

discoverable device to the discovering device, wherein the signal is not transmitted via the common network and is transmitted in a manner that substantially limits its reception to the delimited space; and  
repeating the transmission of the signal on a prescribed periodic  
basis.

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